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ABSTRACT

Approaches to the study of the environment are first discussed in general, then recommendations are made to include environmental education topics in preservice teacher training for primary, secondary, and higher education levels. Inservice education courses are considered briefly. Appendixes include details of program descriptions for environmental education degree courses at two schools; a survey of subjects studied in environmental education courses at 55 schools; a description of environmental studies at two colleges of education; and an analysis of inservice activities available, in terms of workshop sessions, courses, and conferences, and higher degree programs for experienced teachers. (DT)

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INTERNATIONAL WORKSHOP ON ENVIRONMENTAL STUDIES IN HIGHER EDUCATION AND TEACHER TRAINING

CONFÉRENCE INTERNATIONALE DE TRAVAIL SUR LES ÉTUDES EN CONSERVATION DE L'ENVIRONNEMENT AUX NIVEAUX DE L'ENSEIGNEMENT SUPERIEUR ET DE LA FORMATION DES MAÎTRES (1972)

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HIGHER EDUCATION PROGRAMS IN ENVIRONMENTAL EDUCATION IN GREAT BRITAIN

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Higher Education Programs in Environmental Education in Great Britain

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Introduction

"Environmental Education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his bio-physical surroundings.
Environmental Education also entails practice in decision making and self-formulating of a code of behaviour about issues concerning environmental quality" (I.U.C.N. 1970).

Discussions about education are often littered with high sounding terms, many insufficiently examined or defined and which may mean very different things to different people. It is, of course, the learning which takes place that is of more importance than the name used to describe the learning situation, but a clearer understanding of the terms used and the implications for both student and lecturer, would lead to more meaningful discussion and purposeful work. Terms commonly occurring in Environmental Education include "Environmental Studies", "Local Studies", "Rural Studies", "Rural Science" and much of the work covered within these courses may also occur in various types of "Integrated Studies" or "Interdisciplinary Studies".
Such "loose" terminology may be the result of the very rapid evolution of Environmental Education from subject based curricula. In many Schools, Colleges of Further Education and Teacher Training Colleges environmental work has been introduced in an attempt to re-invigorate a subject by the introduction of local material which pupils and students may find more realistic and interesting.

I would suggest that any study of the environment should be "man" centred, perhaps the term "Human Ecology" with its holistic approach to the human environment is more appropriate and precise a term than, for example, "Environmental Studies".

Human Ecology implies an autecological study with man the focal point. Man develops, exploits and conserves both his physical and biological environment. He is a part of the ecosystem and within this complex both biotic and abiotic factors interact. Consequently any consideration of the human environment cannot be restricted solely to the biological sciences and when attempting to consider human society in relation to its environment a study of many other disciplines is essential.

Thus, Human Biology, Anthropology, Geography, History, Biology, Behavioural Studies, Religious Studies, Economics, Geology and Architecture, all must form an integral part of any study of man and his environment.

Environmental Education must therefore provide study in a very wide spectrum of subjects if it is to achieve the objectives set out in the I.U.C.N. definition.

Environmental Education cannot be taught as a discrete subject, it is more of an approach, a "synthesising concept". Although syllabus content is important, the method and approach should be the primary consideration, with the objective of establishing a learning situation concerned with principles, concepts, attitudes, values and skills rather than mere factual content.

Conversely, Environmental Studies is always a subject and possibly denotes a study that has evolved from rural studies but now includes aspects of geography and history. It has been said, that, what has hitherto been regarded as "gardening" has been upgraded and respectability enhanced by inclusion in the syllabus of more academic studies and a retitling of the course - "Environmental Studies". The term "Rural Biology" may be preferred for a more specialised course of plant and animal husbandry.

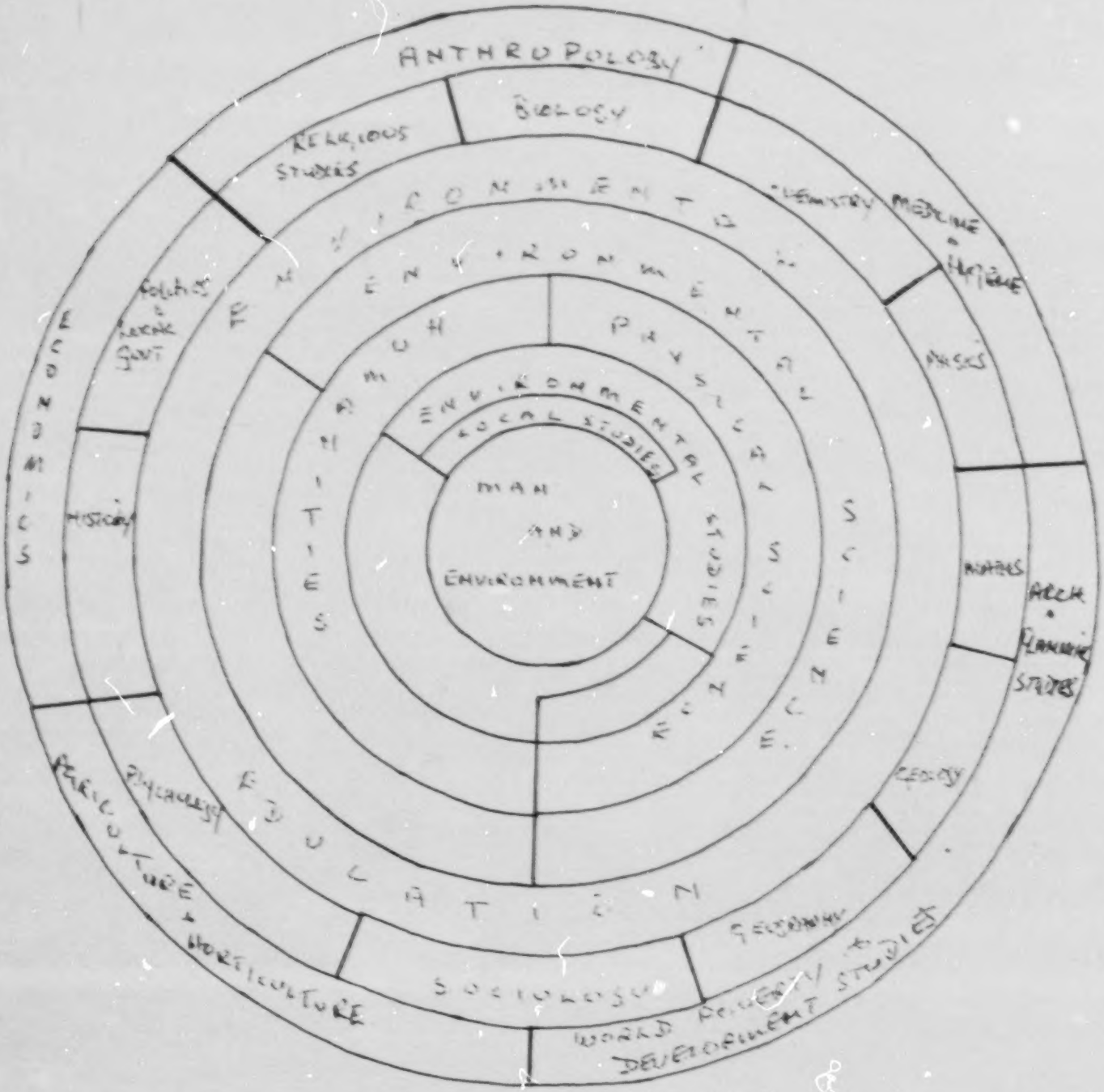
"Environmental Science" involves an academic study of the landscape, of the plants and animals naturally present and their ecological relationships and of the role of man in the natural environment.

The following diagram represents some of the relationships between traditional subject areas in the sciences and humanities and various environmental approaches (see fig. I). The focal point is man in relation to his environment. Subjects distributed towards the centre, e.g., local, and environmental studies represent more factual, less conceptual, limited and narrow based studies, whilst those towards the periphary, e.g., environmental science and environmental education indicate increasing integration of subject matter and a more

broad based and conceptual approach. The traditional subjects involved in any study of the environment are depicted externally to environmental education and the most peripheral subjects include those which, I believe, should form part of any environmental education program.

FIGURE I

Relationships between traditional subject areas and various environmental approaches



The contribution of individual discipline to studies in Environmental Education

I have outlined in my introduction the necessity for a study of many subjects in order to achieve a holistic outlook in Environmental Education. To justify the inclusion and specify the role of individual disciplines in Environmental Education Programs it is necessary to examine the aims of such programs. Whilst these differ in detail at degree level and within pre-service teacher training courses there are nevertheless common objectives:

(1) To train scientists to develop an integrated approach to human society and associated environmental problems.

(2) To provide ecological training for all students but particularly for those involved in the education of coming generations.

(3) To train adequate numbers of educated general environmentalists, individuals trained in environmental management who could complement the specialist and help educate the public in environmental matters.

(4) To provide specialist, environmental experts who would be involved in decision making and liaison with adminstrators, politicians and industrialists. The same people could form the core of environmental research teams.

It is perhaps in pre-service teacher training schemes that the aims and objectives can be further elaborated

(1) Primary school level:

Pre-service courses should provide an education which enables the teacher to develop in his pupils a respect for the environment and a desire to learn from it. Programs should also enable the teacher to assist the development in the child of the acquisition and progressive development of basic skills and concepts and to provide a source and stimulus for creative work and to give opportunities for discovery. The primary school teacher is not an academic lecturer but his role is that of friend, adviser and creator of teaching situations, using initially the local environment but later possibly extending beyond this.

In order to achieve these objectives pre-service courses should provide information on ecology, the development of human society and the human impact on the environment. Such a course should lead to the realisation in the young teacher of his personal and social responsibilities towards the environment. It should also enable him to make full use of the environment as a teaching medium in general education.

(2) Secondary school level

Pre-service training should enable the teacher to build upon the knowledge gained by his pupils at primary level. To further encourage learning from the environment and to initiate a study program in learning about the environment. In many schools the traditional subject based curriculum still persists and a study of such subjects as biology, history and geography can make their own contribution to achieving the "synthesising concept" but it is in the integration area where teachers may fail to sufficiently inter-relate their approaches to create in the pupils an holistic outlook.

There now exists specific courses in "Environmental Studies" which lead to C.S.E. O/L and the G.C.E. A/L.

Pre-service courses at secondary level should equip students to teach these courses. Student teachers should be trained to set up and run successfully integrated courses by recognising those basic concepts central to other disciplines.

Once objectives have been clarified, difficulties arise at all levels of Environmental Education when attempting to define the fundamental role of different disciplines and in assessing what degree of emphasis individual subjects warrent in programs.

Let us consider the role of Ecology in a higher education environmental program.

Ecology is involved with the study of natural animal and plant communities. Should it therefore be studied in this context only, or should most emphasis be given to the effects of man, both as a component of the ecosystem and as its most influential modifier. Modern man has altered the natural ecosystem more rapidly and fundamentally than any other ecological factor.

P.J. Newbould sees ecology as providing a conceptual framework within which the ecology of human populations and their inter-relationships with the environment may be studied. This framework is built upon such features as the ecosystem concept, its continuity and dynamic nature and factors which influence and control it. Such concepts can be applied readily to simple human situations, but difficulties arise when applying them to concentrated modern urban populations. However, on a global scale such concepts can be applied to the study of man within the human ecosystem and it is in this application that I see the major role of Ecology in Environmental Education.

A similar situation seems to exist when the role of geography is considered. Geography is itself a multi-disciplinary study concerned with both human and non-human phenomena and their inter-relationships. It can serve as a model for the development of the holistic approach which is so basic to Environmental Education. A study of geography will help to break down the many divisive compartments into which Environmental Education may be fragmented.
Geography should serve as the most important medium for the study of developing countries. Too little is done educationally to examine and broadcast the problems of almost two thirds of the world's population. The studies of Religion, Current Affairs, Natural Sciences and Foreign Languages give only very marginal coverage and token importance to the massive problems of world poverty and development.
Interest is increasing in the study of the poorer areas of the world, this is encouraging, but is still somewhat small scale. I would hope to see the study of geography playing a major role in stimulating the interest and increasing the awareness of both students and the general public in the many diverse problems facing developing countries.
Inclusion in geography courses of major studies in "People and Poverty" is to be recommended, covering such areas as population, food supply and problems associated with poverty.
The development of geographical courses in Environmental Education programs providing an overall "World perspective" is desirable. A more realistic study of the contemporary world is that of "Developed" and "Developing" areas rather than the traditional divisions into continents. In this way many continental boundaries are cut across, and by careful selection of examples appropriate to the overall theme, from anywhere in the world, a balanced world perspective may be provided.

The roles of Biology, the Physical Sciences and History in Environmental Education are possibly more clearly defined than those of Architecture and Planning Studies and Economics. However, I see the physical design professions (architecture, planning and landscape architecture) as making significant contributions to the field of Environmental Education because they too encompass wide fields of study and require students to achieve an effective synthesis. These professions are all

concerned with the relationship between man and his environment and are specifically concerned with environmental manipulation within defined limits.

The importance of the design professions in Environmental Education lies at the interface between planning and architecture, for example, in the design of new communities and their environment, or the effects of new structures on the quality of life of communities. Architecture and planning studies must train people in environmental education, not merely to be descriptive but to become more problem orientated if environmentalists are to attempt to solve any of the critical problems facing mankind today.

The study of Economics is important in programs on Environmental Education. It is concerned with man, the decision maker on the use (or abuse) of the natural resources his environment provides. The "doomwatcher" advocates an "all is about to be lost" policy, economic studies can help allay some of their fears to some extent by pointing out the merits of the environment. Our environment has provided more than pollution, it has provided many attributes which have greatly enhanced our quality of life. I see therefore economics as acting as a "balancing" subject between on the one hand the "doomwatchers" and on the other "it will be allright on the night" philosophers.

Such studies can help train environmentalists to quantify in economic terms proposed solutions to environmental problems. This is important because decisions regarding the adoption of ecologically determined programs are essentially political decisions and "cost" becomes a vital factor in the implementation of such schemes.

Higher Education Programs in Environmental Education

Degree Level Courses

A contemporary argument exists that awareness of environmental problems must go hand in hand with Environmental Education and that only by radical changes in our educational attitudes will we ever fully emphasise the reality of the environmental crisis. Understanding and real concern can only come with education. There is a danger here that if a course of environmental studies becomes so formalised and integral a part of the established educational structure that it may lose its impact. At school level, children may only come into contact with environmental problems in the classroom, through the medium of formal teaching, and consequently such teaching is both desirable and essential. If real efforts were made to increase the amount of "out of school" Environmental Education then formal teaching could be reduced.

The conclusions of many Symposia support the desirability of introducing Environmental Education at both primary and secondary levels of education. In order to implement such recommendations it is logical and necessary to provide programs at a tertiary level. Within the last few years environmental studies have appeared in VIth form courses, Teaching Certificate, CNAA and University Degree Courses. The development of such programs has occurred in two ways:

(1) By a gradual absorption of environmental topics into the traditional subject groupings. This has been very true of geography courses. Lecturers and teachers in Biology, General Science and General Studies have also taken the opportunity to introduce new material and attitudes into their programs.

(2) By the development of formal courses and syllabi specifically designed for Environmental Education. At degree level such courses are of a multidisciplinary nature. Environmental Education courses at degree level provide a logical extension to all the efforts at introducing environmental studies in Schools. They enable the more academic students to continue into higher education and to study in depth those subjects which have interested and stimulated them at school level. Moreover the graduate in Environmental Studies can choose from a wide range of

employment opportunities, in government, industry, education and research. The training at first degree level should be essentially non-vocational and non-specialist. The training of environmental specialists can best be achieved by post-graduate courses. There is an increasing number of "environmental" degree courses becoming available at Universities and Polytechnics in Great Britain. The majority of existing courses are relatively new: 5 - 7 years of age.

The rationale behind the development of "Environmental" degree courses is complex. Some of the factors involved include:

(1) The need to remove the artificial limits between many Arts and Science subjects, for example there are increasing affinities between the Biological and Social Sciences.

(2) The recognition of the breadth and complexity of environmental issues paralleled by the reaction of some students and faculties against narrow research orientated study and an appreciation of the connections between subject fields, rather than the separation between them.

(3) The need to concentrate on the biology and ecology of a single species - man, thus giving a concentration and coherence which could be lacking in the more diverse syllabuses of a conventional biology degree.

(4) The fact that biological courses must become less specifically job-orientated and become more concerned with the enhancement of general qualities, such as intellectual curiosity, critical and analytical ability and value judgement. Allied with these objectives the training in the tools of these qualities such as experimental method and statistical analysis is both necessary and desirable.

(5) The desire of humanity for the establishment of a human society in balance with its environment. The necessity to ensure that the achievement of such stability does not fail because of a lack of suitably educated manpower. Manpower involved not only in research but in administration and decision making. The greatest need would seem to be for environmentally literate administrators to devise and run an essentially scientific infrastructure for our society.

Many problems and objections have arisen in the development of such courses.

Multidisciplinary degree courses involve the crossing of departmental boundaries, even institutional boundaries and generating support

beyond the parent institution.

Developments in interdisciplinary fields is handicapped by traditional university subject areas and by the continued separation of the natural and social sciences. The conventional departmentally-orientated teaching and research programs have often suppressed cross-fertilisation of ideas. Close interaction of different disciplines and faculties is necessary. No one will deny that the boundaries between biology, psychology and social science are somewhat tenuous and yet in many of our older universities the study of such subjects is strictly departmentalised. Some attempts to overcome this compartmentalisation have been made, for example in the introduction of psychology and sociology into medical education, human genetics courses given to sociologists, but most success would seem to have been achieved in the newer universities where no traditional departmental structure exists.

The development of the Honours Degree in Environmental Science within the School of Environmental Science at the University of East Anglia has had relatively few constraints placed upon it, mainly because of the more flexible structure. Where the "school" structure does not operate it has been possible to run, successfully, inter-disciplinary programs using the existing courses of lectures and practicals in different departments. This has involved skilful manipulation and synchronisation of timetables. One further difficulty may be that no central library provision has been made and separate departmental libraries still persist. Additional problems arise when attention is given to the component subjects in an Environmental Degree Course.

I have outlined the many diverse subjects which impinge upon a study of the human environment. In drawing up a course structure it is necessary to rationalise these and to define major areas of study relevant to the aims and objectives of the course. Existing degree courses in Environmental subjects include study from a very wide range of subjects, including, Biology, Human Biology, Microbiology, Genetics, Ecology, Human Ecology, Physiology, Mathematics/Quantitative Studies, Geography, Geology, Economics, Sociology, Physical Sciences, Resource Studies, Earth Science, Anthropology, Animal Behaviour, Architecture and Planning Studies, Social Anthropology, and Psychology. For example, candidates in

the Honours School of Human Sciences at Oxford are required to offer six compulsory subjects,

(a) Animal Behaviour
(b) Human Genetics and Human Evolution
(c) Human Ecology
(d) Demography and Population
(e) Sociology and Social Anthropological Theory
(f) General Essay,

in addition they are required to offer any two of the following

(a) Social, developmental and personality psychology
(b) Urban Geography
(c) Modern Social Institutions
(d) Social Anthropology
(e) Advanced Quantitative Methods.

In any academic study of a multidisciplinary nature there arises the conflict between breadth and depth. The degree of specialisation cannot be equated with that of a single subject special honours degree, this leads increasingly to criticism of the validity of "honours" standard for such courses. A compromise must be sought in trying to avoid the label "Jack of all trades" without producing a single subject specialist who would not fulfil the requirement of having a broad understanding of the environment. "Honours" can be justified and such courses judged academically defensible if it is understood that the "degree of cerebration" is achieved by the development within the individual student of an integrated approach to man and his environment. The prime responsibility for the development of this holistic outlook rests with the individual student but much assistance can be given by staff in order to achieve this objective.

Synthesis can be promoted by (1) Team teaching methods

(2) Tutorials, possibly one tutor for each paper who acts as a liaison officer
(3) Seminar groups
(4) Weekend and evening discussion groups between staff and students on specific topics, e.g., Environmental Pollution. These should permit cross-fertilisation of ideas
(5) Project work

Projects should provide a practical

exercise in the use of integrated studies in solving environmental problems. They should involve the collection, analysis and discussion of original data.

Existing first degree courses in "Environmental Education" in no way provide a vocational training, these are essentially educational, to provide a sound logical approach to problems, but problems whose range is different from that norrally encompassed by traditional disciplines.

The areas of employment open to these graduates are diverse. They have entered for higher degrees in Geophysics, Oceanography, Geochemistry, Computer Science, Landscape design, Hydrology, Air photo interpretation in planning.

A high percentage have entered the teaching profession, others into Town Planning, Industry, Civil Service and the Hospital Service.

The overall pattern of available environmental degree courses ranges between two different approaches:

(1) The geographical, earth science environmental approach. As at the University of East Anglia, Plymouth Polytechnic and the Rural Environment Studies degree at Wye College

and

(2) The man orientated, rather than environment orientated approach as at Oxford, Aston and the proposed Human Ecology degree at Huddersfield Polytechnic.

These two approaches do not represent extremes because throughout all academic programs reference is continually made to the inter-relatedness of man with his environment.

Most existing schemes have in the first year a preliminary or foundation program introducing students to the wide spectrum of subjects involved in Environmental Education and providing a thorough grounding in quantitative methods. In the later years of the courses students select one or more options to provide a study in depth of some aspect of mans environment (see Appendix I).

Post-Graduate Courses

Post-graduate courses in Environmental Education tend to be specialist and vocational. The first M.Sc. course in Environmental Pollution has started at Leeds University. Its aim is to produce specialists equipped to identify any pollution problem, to assess it quantitatively and to recommend control measures and identify research needs. A two-year part-time course on environmental pollution leading to Master of Technology commenced in 1971 at Brunel University.
Other opportunities for Post-graduate work may be offered in CNAA diploma courses and in the proposed scheme for the Certificate in Environmental Studies as an HNC/HND supplementary award.

Teacher Training Courses

There are a number of Colleges of Education that are interested in and adopt the environmental approach. Many of these, however, use it only as a Curriculum Studies subject particularly for future primary and middle school teachers and not as a Principal subject.
For the purpose of this paper, reference only, will be made to such courses and to two year Rural/studies and E.S. courses, the main emphasis will be applied to main subject courses in Environmental Education (see Appendix III). As with degree courses Environmental Education in Colleges of Education at Principal subject level is a relatively new enterprise, some of the "older" courses having been in existence for between 8 - 10 years. The majority of colleges have been involved

with such education for only 3 - 4 years. In a 1968 survey, returns indicated that only 10 colleges offered such work in principal subject courses. In 1971 seventeen colleges, and in the latest ACTDE information from a 1972 survey, 42 colleges offer three year main subject courses in Rural Studies and Environmental Studies. The results of a personal survey carried out in June 1972 are given in appendix II.

I have outlined previously in this paper some of the aims and objectives of Environmental Education in teacher training courses. An objective should, where possible, be operational (ie., measurable at the end) and stated in performance terms. The statement of objectives of a measurable program should denote measurable attributes, observable in the student, otherwise it is impossible to determine if the program is meeting the objective.

General discussion with College of Education staff about the aims and objectives of environmental education in teacher training courses provide some overall aims: - I quote,

(1) " To guide students into Field Studies that will lead to a better understanding of the factors which shape and change the environment.

(2) To enable a student to gain an understanding of some aspects of the Natural, Social, Economic and Historical Environments.

(3) The education of skilled and confident generalist teachers.

(4) To make full use of opportunities for discovery offered by districts in which scools are located and in which children live.

(5) To equip students with the techniques necessary to make an integrated study in depth of an environment and to interpret it in a way which trancends the boundaries of conventional areas of study. Students should be able to organise a whole range of visual media to communicate information about, and personal reactions to, the local environment. "

Syllabus Content

Exponents of the "holistic" school regard the environment as being the natural medium for child education. They believe that the teachers task is to provide opportunity for discovery and exploration unhampered by projections of adult ideas, either in the form of subjects with a common adjective "local" or by excessive structuring of the process of exploration.

The widely differing syllabuses of Colleges of Education Environmental Studies courses reflects the variety of thinking behind the courses. The main division of thought would appear to be between those who:-

(a) Expect students should master the methods and sources for individual and group enquiries and the specific facts emerging from their own locality,

and

(b) those who expect students to master general knowledge from the different contributing disciplines. The latter tend to be more highly structured courses and place less emphasis on individual and group enquiry.

It is difficult to make a comprehensive and detailed comparative study of syllabi since many are unstructured and open-ended in their approach.

Analysis of an unstructured syllabus does provide some information about the approach and nature of the course, the standard and quantity of work expected from the students, the techniques and skills to be mastered.

Thus:-

(1) Subjects studied include,

Geography, history, science, architecture and religious studies.

(2) Practical skills are developed at all stages of the work designed to encourage initiative, individual interests and a desire to try out new ideas. Tape recordings, films and model making can take the place of visual presentations on paper.

Emphasis is placed on direct observation in the field and on visual presentation.

Domestic, street and urban environments are examined from a wide range of view points, historical, locational, scientific, aesthetic and others. The rural environments of farm, soil and natural habitats are further studied.

(3) Written work is kept to a minimum and students are encouraged to collect information by visiting archives, offices, libraries and museums.

(4) Knowledge of facts and relationships revealed by field and library study may be tested by oral examination. Students are expected to study each others work and to discuss common problems.

(5) Later in the course time may be given to a close study of an arbitary area of land from the viewpoints of conservation, development or redevelopment and amenity in all its aspects.

(6) Students also compile a study of a parish or similar area of land. Emphasis in assessment here is placed on the degree to which historical, geographical, scientific and other aspects have been integrated and related one to another. Students therefore must avoid the danger of a mere compilation of correlated facts.

(7) Lectures introduce themes for assessed study. They also consider the place of Environmental Education in schools, aspects of rural and urban studies, techniques of map making, equipment, course planning and the availability of reference material.

An analysis of more structured courses in five colleges of education is given in the following table (see Table 1).

TABLE 1

Table to show the range of syllabus content of five colleges of education with structured courses in Environmental Studies

Major aspects of the course	Sub-divisions	Colleges of Education				
		A	B	C	D	E
Aesthetic	artistic		X			
	literary		X			
	musical		X			
Ecological	habitats & ecosystems	X	X	X	X	X
	conservation	X		X	X	X
	pollution	X			X	
	biological control		X		X	X
	soils	X			X	X
	tillage, drainage etc.	X			X	X
	food supply			X	X	X
	disease			X	X	X
	heredity & selection			X	X	X
Economic	structure of economy		X			
	distribution of wealth		X			
	trade					X
	populations (human)			X	X	X
Geographical	land forms & structure	X	X			X
	maps	X				
	climatology	X			X	X
	land use	X	X		X	X
Geological	lithology				X	X
	evolution of land forms	X			X	X
Historical	growth of settlements					X
	urban growth	X	X		X	X
	communications	X			X	X
	history of science			X		
Political	party politics		X			
	freedom & authority		X			
	nationalism & international		X			
	local government	X				X
Pre-history	pre-man			X	X	
	early man	X			X	
Religious and Philosophical	free will & responsibility		X			
	truth		X			
	God		X			
	Christianity		X			

continued/

Table 1 continued/

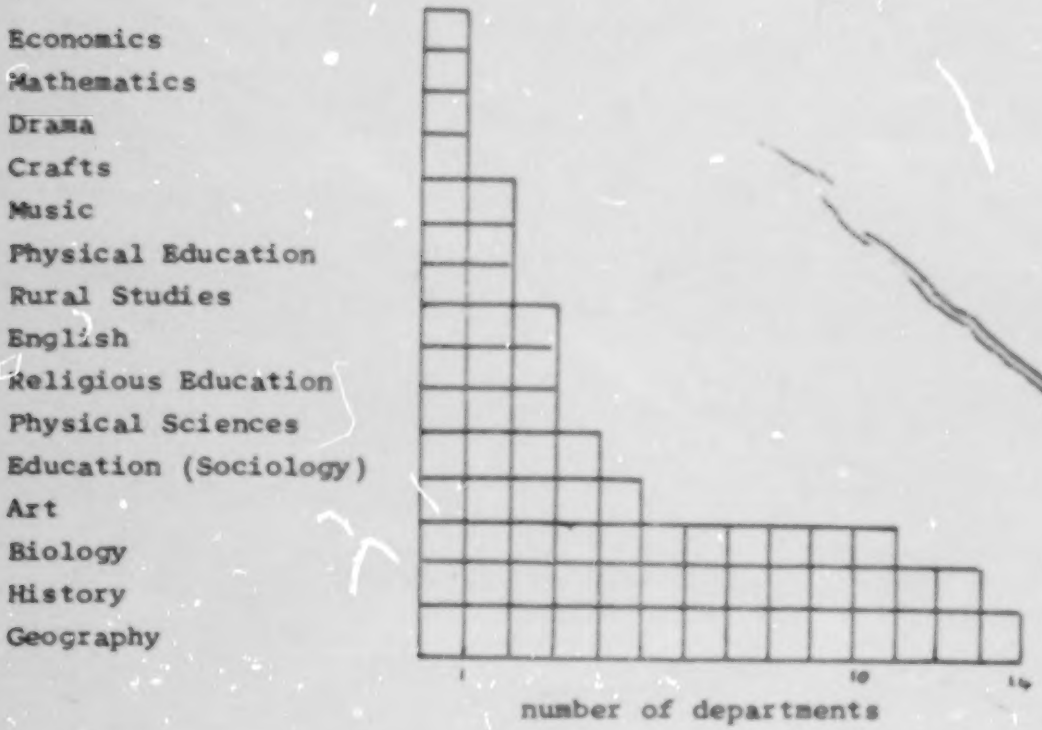
Major aspects of the course	Sub-divisions	Colleges of Education				
		A	B	C	D	E
Sociological	home & family		X			X
	social change	X	X		X	
	work & leisure	X	X		X	X
	social services	X			X	
	control over life & death			X		
Technological	industrial change	X			X	
	energy		X	X		
	industrial processes		X	X	X	
	radioactivity		X	X		
	space research			X		
	new materials			X		
	natural resources	X			X	X

It is obvious that ecological, geographical, historical, sociological and technological aspects of the environment play a major role in educational programs of the more structured type.

Despite the two different approaches to Environmental Education Colleges of Education describe their courses as "integrated". Each discipline may be in the charge of a specialist tutor but where every attempt is made to correlate the subject matter and to demonstrate the interrelatedness of subjects. Conversely the tutor considers himself not in a specialist role but as a member of a team leading a group of students into an environmental study. Such an approach necessitates some form of team teaching which is now widely practiced in colleges of education. The range of such team teaching extends from colleges who claim their courses are "fully integrated" to those which hold a one hour symposium each week in which a historian, a geographer, a biologist, an artist, a rural studies and handicrafts tutor are involved. Analysis of the departments contributing to environmental studies in a sample of Colleges of Education is given in Table II. Geography, history and biology are clearly well represented. Sociology and Economics seem less so and yet such aspects of environmental education are of considerable importance.

TABLE II

Departments contributing to Environmental Studies courses in fourteen Colleges of Education



A most important factor in achieving integration is that the tutors concerned must appreciate and respect each others discipline if integration is to work, they must constitute a genuine team of willing and enthusiastic people cooperating completely and prepared to re-appraise the courses continually in terms of their contents, aims and objectives.

There is little new about Environmental Education in terms of content, what is new is the readiness of teachers to become involved in team studies of the environment, to share the task of exploring it and to look for ways of conserving it, where this seems necessary for a variety of reasons, aesthetic, scientific or economic.

Most colleges of education examine their environmental studies courses by a combination of written examinations, assessment of course work and a special study.

Continuous assessment only is not encouraged, but does exist.

Within the Leeds Institute in main Biology Courses (which are often very environmentally orientated) a new factor in assessment has been introduced, viz., "Work Units". Work units are assessed and form an integral part of the course and yet involve no additional work.

In-service Courses

The aim, objectives and content of the Environmental Education schemes described are those currently in existence in U.K. Colleges of Education.

However, considerable reforms in the education and training of teachers has been recommended in the James report on "Teacher Education and Training" 1972. In this report Lord James refers to the first, second and third cycles of training. The first cycle is personal education, the second pre-service training and induction and the third cycle in-service education and training.

His committee recommends a large expansion of third cycle provision to give every teacher an entitlement to regular in-service education and training.

There has already been a considerable expansion of in-service activities in the field of Environmental Education. However, provision is still insufficient to cover more than a small part of the total need. All subject specialists need to refresh and extend their knowledge of their special interests and general teachers to widen their command of the content of what they teach. Changes in curriculum make new demands, which teachers have to be equipped to meet. In-service programs must provide opportunities for teachers to obtain degrees and post-graduate qualifications. Certainly B.Ed courses and M.I. Biology courses permit graduate study on a part-time or release basis. However, secondment and day-release facilities are as yet dependent on the circumstances of the individual schools and the approval of the local authority, and on many occasions such approval is not granted.

At the present time, in-service training in Environmental Education is provided largely by University Institutes of Education in the form of one day symposia and residential courses of approximately one weeks duration (see Appendix IV).

Two very interesting developments in Environmental Education are those at the University of Liverpool and the University of Reading. Both universities provide in-service courses. That at Reading is a Diploma in Environmental Studies in Education, a one year, full-time course for experienced teachers.

The course is organised to help those following it, to make full use of the educational resources of the environment. This course will commence in October 1972 (see Appendix V).

The Liverpool course is designed for qualified teachers and leads to a Diploma in Environmental Education. The course has a dual purpose,

(1) To introduce students (or reinforce for them) the structures and concepts of the component disciplines involved in Environmental Education,

and

(11) To provide a strong professional bias both theoretical and practical.

The course is part-time, extending over two academic years, (see Appendix V) and commenced in September 1971.

It would be gratifying to see (1) Many more short courses developing, (11) An increase in the number of part-time diploma courses and (111) Many more opportunities for teachers to obtain day-release or secondment to attend such courses.

R.A. Ede
August 19[illegible].

APPENDIX I

Plymouth Polytechnic

B.Sc. Environmental Sciences

The aim here is to produce generalists, and the approach is therefore consciously interdisciplinary.

The first 3 terms are regarded as a foundation year, in which the basic concepts of earth structure, resource distribution and mathematical methods are considered, together with relevant concepts in the biological or earth sciences. The choice between these basic sciences determines which wing of environmental sciences the student may eventually enter. The central concept - resource appraisal and management, is open to all.

The 4th term is integrative, and will use seminar methods as the major part of the teaching. It is concerned to examine the basic concepts covered in year 1 in the light of economic and sociological theories and constraints. In the 5th and 6th terms all students must take Resource Studies I, which is largely concerned with the appraisal and classification of resources. Man and Environment I considers the social context in which man affects his environment, while Environmental Geology I is concerned with earth processes affecting resources.

In the final year, students may opt for Resource Studies II, which deals with environmental management, or for Man and Environment II which is concerned with the "balance or nature" and man's effect upon it; or for Environmental Geology II which considers the relationship between engineering and mining processes and the environment. The overlap between these three options is deliberate and is to be exploited during the teaching.

Proposed Degree in Human Ecology

Course Structure

	Standard Courses			Ancillaries	
YEAR I Sept/Feb = 18 hours Feb/July = 16 hours including tutorials	HUMAN BIOLOGY 3 hours	ECOLOGY 3 hours	QUANTITATIVE STUDIES 2 hours	3 Courses from:- Economics Geography Physical Science Earth Science Biological Science Mathematics 3 x 6 hours	
YEAR II Sept/Dec = 20 hours including tutorials Dec/July = 20 hours including tutorials	HUMAN BIOLOGY 4/5 hours	ECOLOGY 4/5 hours	BEHAVIOURAL STUDIES 3 hours	ECONOMIC METHODS 3 hours (One to be selected) MAN, SYSTEMS AND LANDSCAPES or ECONOMIC STUDIES 3/4 hours	SPECIAL OPTIONS
YEAR III	I N D U S T R Y - 12 M O N T H S				
YEAR IV 16 hours including tutorials	ECOLOGY 6 hours		BEHAVIOURAL STUDIES 3 hours	MAN, SYSTEMS AND LANDSCAPES or ECONOMIC STUDIES 3 hours	
PROJECT - 4 hours					

APPENDIX A

The subjects of the Preliminary Examination in Human Sciences are:

(1) General Biology
(2) Genetics and Evolution
(3) Sociology and Social Anthropology
(4) Geography and Ethnology

Subject 1. General Biology

The cell as a unit of structure. Organization of the cell. Organs and tissues. Co-ordination. Embryology. Nervous system and sense organs.

Behaviour as an observable phenomenon; internal and external determinants; development and evolution. Animal communities.

One three-hour written paper will be set. There will also be a practical examination which will be assessed together with the practical study done by the candidates during their course of study.

Subject 2. Genetics and Evolution

Cells, chromosomes, and cell division. The nature and mode of action of the gene. Particulate inheritance, linkage, and crossing-over. Dominance, polymorphism and polygenic inheritance. Heredity and environment. Introduction to human genetics.

Evidence for evolution and elementary treatment of its mechanisms. Nature and origin of species. Adaptive radiation. Historical survey.

One three-hour written paper will be set, which will include one compulsory question on statistics (see below). There will also be a practical examination which will be assessed together with the practical work done by the candidates during their course of study.

Subject 3. Sociology and Social Anthropology

An elementary introduction to Social Anthropology and Sociology; their history, scope, methods, and bearing upon other subjects.

One three-hour written paper will be set, which will include one compulsory question on statistics (see below)

Subject 4. Geography and Ethnology

(a) Geography

Geographical concepts of environmental influences and ecological relationships; factors in the development of cultural landscapes; patterns and types of settlement; geography of plural societies.

(b) Ethnology

The cultures and social institutions of selected peoples with special reference to their ecologies, economies, and

spatial distributions.

One three-hour paper will be set.

Statistics

Frequency distribution and their summarization. The idea of probability. Elementary properties (without proof) of the binomial and normal distributions. The sampling distribution of the mean. Significance tests, including elementary analysis of variance, correlation, and regression. Sampling.

APPENDIX B

HONOUR SCHOOL OF HUMAN SCIENCES

The Honour School is divided into two sections. All candidates will be required to offer the following six compulsory subjects:

(1) Animal Behaviour
(2) Human Genetics and Human Evolution
(3) Human Ecology
(4) Demography and population
(5) Sociological and Social Anthropological Theory
(6) General Essay

Candidates will also be required to offer any two of the following subjects:

(7) Social, Developmental and Personality Psychology
(8) Urban Geography
(9) Modern Social Institutions
(10) Social Anthropology
(11) Advanced Quantitative Methods

Schedule of Subjects

1 Animal Behaviour

Description and analysis of animal behaviour; the basic questions (causation, survival value, ontogeny, genetics, and evolution); sensory equipment; complex stimuli; timing and orientation of behaviour; action sequences and their analysis; internal determinants and complex behaviour systems; conflict behaviour; social behaviour; the search for possible animal roots of human behaviour; 'nature and nurture'; play and exploratory behaviour; development of social behaviour; animal language and human speech; aggression; genetic and cultural evolution.

Social behaviour in primates, particularly the study of organisation of social groups; relationships to ecological factors; reproductive and parental behaviour; communication systems; development of affectional systems; effects of early experience on adult behaviour.

2 Human Genetics and Human Evolution

The theory of genetic polymorphism; heterozygous advantage and the super-gene in man. Blood grouping. The simpler and the more complex blood group series. Other human polymorphism.

Human sex-determination and sex-linkage. Heteroploidy in man. Multifactorial inheritance. Ionizing radiation and population genetics. Polymorphism, especially that of the blood groups, as a racial criterion in man.

Man's place in the Animal Kingdom; the order Primates; human palaeontology; general factors involved in the evolutionary emergence of man; the nature, genetics, distribution and selective significance of human characters which show geographical variation.

3 Human Ecology

The interrelation between man and his environment. Population distribution in relation to habitat and economy; climatic, nutritional and disease ecologies; components of fertility; population growth, structure and migration; regulatory mechanisms of population size in animals and man; the role of man in changing his environment; conservation in natural resources; natural principles of land use.

4 Demography and Population

Population theories. Population statistics and projections. Quantitative methods in demography. Biological, psychological and social determinants of fertility. Causes of infertility. Ecological variance in death and birth rates. The age and sex ratio structure of populations. Historical demography. Causes and consequences of migration (international and national). World patterns of population growth. The geography of population distribution. Population control, family planning, and contraceptive technology. Evolution of occupational changes. City and metropolitan growth.

5 Sociological and Social Anthropological Theory

Sociological theory; the principal theoretical contributions to sociology, in particular theories relating to the social system; the sociological aspects of economic, political, religious, intellectual, and kinship institutions; social control; social disorganization; the analysis of social movements and organizations; social conflict; the processes of social change. Candidates will also be expected to show knowledge of the concepts and methods used by the principal writers.

Social anthropological theory: the history of anthropological theory; the theories of the nineteenth century; Durkheim and the school of Année Sociologique; structure and function; Malinowski, Radcliffe-Brown, and their successors; later developments; Evans-Pritchard, Levi-Strausse; Structural studies, theories of meaning, symbolism, systems of classification, belief.

6 General Essay

Candidates will be required to answer one from a range of questions, each of which will demand knowledge of more than one of the basic approaches to the study of human behaviour.

7 Social, Developmental, and Personality Psychology

Person perception and social interaction; group processes, including norm-formation, decision processes, and leadership;

role, status and behaviour in social organizations; attitudes and attitude change; cross-cultural variations in social behaviour.

Changes of behaviour in infancy, childhood and adolescence; origins of motor behaviour, perception, cognition and motivation; socialization and processes of social learning; the development of language; interpretation of developmental processes in terms of psychological theories.

Biological aspects of personality; inheritance and environment in relation to intelligence and other aspects of personality; the statistical analysis of traits and the assessment of personality; the analysis of personality in terms of learning theory, cognitive and verbal processes, and dynamic mechanisms.

8 Urban Geography

The historical background to urban growth; the influence of environmental and cultural factors on the evolution and form of urban centres; the planned town; principles underlying the distribution of cities; central place theory; methods of classifying cities; patterns of urbanization.

Land use in cities; the Central Business District; suburbs; the population of town and its distribution within the urban area; the nature of transport in towns and the effect of transport on the urban plan; the evolution, form and functions of conurbations.

Candidates will be expected to show knowledge of the kind of maps useful in the analysis of urban areas.

9 Modern Social Institutions

Candidates will be expected to show knowledge of the following aspects of the social structure of urban-industrial societies: social stratification and mobility; demography and the family; urbanization; the sociology of industry and large-scale organization; the social context of politics; the social structure of religious organizations and of education. They must have knowledge primarily of modern British society but in the comparative context of other industrial societies. An understanding of modern techniques of social inquiry will be required.

10 Social Anthropology

Candidates will be expected to show a knowledge of the major theories of the discipline. In addition they will be examined in more detail on: the anthropological aspects of population and demography, political systems, systems of marriage, alliance, descent (with their relation to and differentiation from their genetic and biological correlates), social development of the individual, the comparative study of political systems, theories of social control, theories of social change, linguistic and communication models, the analysis of belief, myth and ritual, symbolic representations, social anthropological methods and procedures.

11 Advanced Quantitative Methods

General statistical principles and methods, including standard distributions, sampling properties and tests, regression and correlation theory, estimation methods, design and analysis of statistical experiments and sampling surveys.

Specific statistical and quantitative techniques discussed in relation to some fields of application in biology, medicine and sociology, including multivariate methods, analysis of genetic data, and demographic techniques.

Applications of stochastic models in the biological and human sciences.

APPENDIX II

College of Education Survey 1972

ENVIRONMENTAL EDUCATION COURSES

College	Level					Subjects Studied					Proposed Expansion in Environmental Education
	M	S	I	J	S	Ecol.	Biol.	Geog.	Geol.	Hist.	
1	X	X				X*	X	X	X	X	YES
2	X	X	X	X	X	X*	X	X	X		YES
3	X	X		X	X	X*		X	X	X	YES
4			X	X	X	X	X	X	X	X	YES
5	X	X	X	X	X	X*	X	X	X		NO
6			X	X		X*		X	X	X	YES
7	X	X	X	X	X	X*	X	X	X	X	YES
8	X		X	X	X	X*	X				YES
9	X					X*	X	X		X	NO
10	X	X	X	X	X	X		X*	X	X	NO
11	X	X	X	X	X	X*	X	X			YES
12	X					X*	X		X		YES
13		X				X*	X	X	X	X	YES
14	X					X*	X				YES
15		X			X	X*	X	X	X		NO
16				X	X	X*		X			NO
17	X			X	X	X	X	X	X	X	NO
18	X	X	X	X	X	X*	X	X*	X	X	NO
19	X		X	X	X	X	X	X		X	YES
20		X	X			X	X	X	X	X	YES
21					X	X*					YES
22	X	X	X	X	X	X	X	X	X	X	YES
23	X	X				X*		X*	X		YES
24	X	X	X	X	X	X*		X*	X		YES
25			X	X	X	X	X	X		X	YES
26	X		X	X	X	X*	X	X*	X	X*	YES
27					X	X	X	X	X	X	YES
28	X			X	X	X*					NO
29	X	X				X*					YES
30		X						X*	X		NO
31		X				X*	X	X	X		YES
32		X		X		X*	X	X	X	X	YES
33	X	X	X	X	X	X*		X	X*		YES
34			X	X	X	X	X	X		X	YES

College	Level					Subjects Studied					Proposed Expansion in Environmental Education
	M	S	I	J	S	Ecol.	Biol.	Geog.	Geol.	Hist.	
35			X	X	X	X	X	X	X	X	YES
36			X	X	X	X	X	X	X	X	YES
37	X	X	X	X	X	X	X	X	X	X	YES
38	X				X	X*	X				YES
39	X	X	X	X	X	X*	X	X			YES
40			X	X	X	X*	X				YES
41	X	X	X	X		X*	X				YES
42	X		X	X		X	X	X*	X	X*	NO
43			X	X	X	X*	X	X	X	X	YES
44	X		X	X	X	X	X	X*	X	X	NO
45	X	X	X	X	X	X	X	X	X		YES
46	X		X	X	X	X	X	X	X	X	YES
47		X	X	X	X	X		X		X*	YES
48	X			X		X*	X	X	X		YES
49			X	X	X			X*		X	YES
50		X	X	X	X	X*		X	X	X	NO
51						X*		X*			YES
52	X		X	X	X	X	X	X	X	X	YES
53			X	X	X	X*		X		X	NO
54	X	X	X	X	X	X	X	X	X	X	YES
55	X	X	X	X	X	X*	X	X	X		YES

LEGEND

M = MAIN COURSE

S = SUBSIDIARY COURSE

I = INFANT

J = JUNIOR

S = SECONDARY

* = COURSE EMPHASIS

APPENDIX III

BINGLEY COLLEGE OF EDUCATION

Main Course — ENVIRONMENTAL STUDIES

A. A study of local environments in the field, with particular attention to the landscapes of the Aire and Wharfe basins.

Students will also present the results of a field study undertaken independently either in their home district or some other area where a sufficient period of intensive field study is possible. In the initial stages the total environmental pattern will be examined with exercises in general field techniques of reconnaissance, observation and recording by field sketching, survey and photography.

The particular emphasis of the more advanced work will depend on the students' own interests. The opportunities will be provided for more intensive study of the following:

(1) Geology and geomorphology.

(2) Plant and animal ecology and land utilisation.

(3) Field archaeology: prehistoric and Roman, or industrial.

(4) Period architecture.

(5) Settlement and field patterns.

(6) Local planning in relation to the Yorkshire and Humberside regions.

Teamwork in local research will be encouraged. At least one field course in Environmental Studies will be held in a contrasting environment offering sufficient variety to cater for the individual interests of students.

B. Sample Studies of Landscapes in Britain and abroad

Wherever possible these will be initiated by field work but for practical reasons this section will primarily be based on methods of indirect observation, especially in the form of maps and photographs.

e.g. (1) Rural and Urban Yorkshire.
(2) Scottish Highlands and Islands.
(3) Snowdonia.
(4) S.W. England.
(5) Metropolitan England.
(6) French Flanders.
(7) Paris Basin.
(8) Low Countries.

IT/RP
23.4.70

ST. PAUL'S COLLEGE, CHELTENHAM

ENVIRONMENTAL STUDIES (C.C.1) J.C.M. 3.9.'70

The Two and Three Year Courses - Aims and Pattern.

Our Environmental Studies course may be studied for two or three years, in the latter case as a "Double Principal" with another subject other than C.C.11. Students follow a common programme of studies until Term 6 when those wishing to take the course to Principal Subject level begin work on an extended written project that occupies much of their final year.

The Environmental Studies approach to teaching seeks to make full use of opportunities for discovery offered by districts in which schools are located and in which children live. It places stress on the importance of environment in children's lives and education. In doing so, geography, history, science and a number of other subjects, such as architecture, are brought together in a natural unity relevant to childrens' own experience. This is also true at student level, particularly in the case of those whose recent studies have been of a more formal, subject based variety. Practical skills can be developed at all stages in work designed to encourage initiative, individual interests and a desire to try out new ideas. To these ends, work assignments can be varied, after consultation with tutors, to give students opportunities they seek within the general framework of the programme. As instances, tape recording, film and model making can take the place of visual presentations on paper. When essays are required, a wide choice of subjects is offered, students being free to suggest futher themes for approval by their tutors. A firmer directive as to choice of theme is given in relation to longer written studies. This is to insure parity of standards and a selection of themes neither too difficult nor too empty of content for work receiving a high assessment.

In the First Year emphasis is placed on direct field observation and on visual presentation. Early in the programme, domestic, street and urban environments are examined from a wide range of view points - historical, locational, scientific, aesthetic and others. Later in the year, the rural environments of farm, soil and natural habitats are studied as further 'projects'. Formal written work is at a minimum. Students are encouraged to collect information in the environments being studied and to answer questions that arise by visiting archives offices, libraries and museums. This 'indoor' phase of an investigation often raises further questions that call for further field-studies. Background reading is regarded as essential and reference lists are issued in relation to each project. Students are encouraged to buy books and pamphlets, named in these lists, of lasting value in environmental teaching. Some aspects of the year's work, such as the identification of trees, plants, crops, animals, architectural styles etc., can only be carried out effectively by students going out on their own with, at first, elementary books of reference. This kind of knowledge is not best acquired through the lecture medium. Stress is placed on extending knowledge and understanding through the preparation of visual schemes. Knowledge of facts and relationships revealed by field and library study is tested by oral examination.

'Projects' may be terminated either by an exhibition or by the preparation of some lasting record such as a booklet or a slide series. Students are expected to study each other's

work and to discuss their common problems in order to exchange ideas and information.

Lectures, during the First Year, introduce each project and provide a framework of facts and ideas into which field-work may be fitted. In Term 2 the lecture programme is more concentrated and includes a series on Social History. Later, in the same term, lectures and laboratory meetings are held on the theme of soil analysis. Keeping formal lectures to a minimum is a deliberate policy designed to give emphasis to alternative paths to understanding.

Second Year studies are more formal in nature. Although visual presentation is still important, the emphasis moves to written work supported by illustrations. Assessments are based on the general quality of both elements and on the extent to which their integration, and that of the various sectors of our syllabus, has been achieved. The standard sought is that generally associated with College students in their second year. The first half of Term 4 is devoted a to a close study of an arbitrary area of land (it could be as large as a grid square of countryside or as small as a complex urban area enclosed by streets forming clear boundaries) from the points of view of conservation, development or redevelopment, and amenity in all its aspects. It would be possible to conduct this survey along the lines of the Countryside Commission's "Changing Countryside Survey", or along the lines adopted by many articles in "Architectural Review". A balance of visual and written work should be achieved as should an integration of geographical, historical, scientific and other information. Amenity problems should be defined and possible solutions put forward in a concluding section.

After half-term, a commencement is made on two short essays, one for presentation before the Christmas vacation and the other at its end. Selection may be made from a wide variety of topics, but one should treat of a clearly defined "environmental" theme while the other must be concerned with some aspect of environmental teaching in school. Students are encouraged to develop ideas that they can put into effect during their second Teaching Practice or their Group Teaching Practice in a local primary school. Though short, these essays must be accompanied by illustrations and reference lists.

Term 5 and the first part of Term 6 is devoted to the compilation of a study of a parish or similar area of land, (it could be an urban ward, a school catchment area or other clearly defined unit). The actual choice of area, and the written approach to it, must be decided in consultation with tutors. In assessing this study, great emphasis is placed on the degree to which historical, geographical, scientific and other aspects have been integrated and related one to another. With this end in view, students must define a theme and keep to it, and must avoid the danger of presenting a mere compilation. Material presented for assessment must be largely of a written nature, supplemented by illustrations. This study can take the form of a written essay on the chosen area (village, parish, ward etc.). Alternatively, the survey might be presented in the form of a "pack" containing material that would be valuable to a teacher carrying out an environmental teaching project in the area concerned and with children from a local school. The "pack" must contain background material for reference use by adults, pictorial and map material useful in teaching, statistical information, and work schemes for children. In either case, the work must represent field and library investigation at adult level and of an original nature.

Under some circumstances, students may write on other themes providing that detailed written schemes are submitted to tutors for approval. Two-year men must submit this extended piece of work some ten to fourteen days before the final visit by the External Examiner. It will contribute heavily towards the final mark and will be the subject of oral examination. Close tutorial supervision will be given to all stages of Second Year work and students are required to attend weekly meetings with their tutors unless other arrangements are planned together.

A second assignment, which may also be assessed, is a preparation of four lessons to be given, during Term 6, to children at a Primary School. Four sessions will be spent conducting children in a series of environmental projects close to school. Preparations must reveal the aims, development and conclusion of individual lessons and of the series as a whole, together with self-criticisms written after each meeting. Visual aids, work cards etc. must be prepared for a range of studies to be undertaken by the children. Students must acquaint themselves fully with the factual background. At the end of this Group Teaching Practice an exhibition of childrens' work may be held, or a duplicated booklet prepared for the benefit of all those taking part. Students will be required to submit their preparation notes for inspection and for final comment by tutors. This is in line with College policy at the end of Teaching Practices.

Second Year lectures introduce themes for assessed study. They also concern the place of environmental studies in schools, aspects of urban and rural studies, techniques of elementary map-making, equipment, course planning and the availability of reference material to name a few topics.

Students who continue into the Third Year also take part in the Group Teaching Practice and its preliminaries. Instead of the extended parish, or similar, study in Term 5 they submit two further short essays on environmental teaching. In Term 6 they begin fieldwork, under tutorial guidance, towards an individual study in depth to be completed before the Easter vacation in their final year.

During Terms 7 and 8 seminars are held at which students will speak about aspects of their individual studies or on other topics likely to lead to group discussion. Each student is expected to prepare notes for a filmstrip or slide series based on the theme of their individual studies or on some other environmental theme approved by tutors. For those so desirous, the making of a movie film or the preparation of a tape recording supported by visual material could form an alternative approach. A further possibility is in the field of model making as a means of interpreting environments. Such practical work is assessed and discussed at seminars.

Assessment Points. Students receive a written comment on each piece of work submitted. A numerical mark and a letter are also awarded, the relationship between the scales being:-

over 70%	A	S+++
60-69%	B	S++
55-59%	C+	S
50-54%	C	S
45-49%	C-	S
40-44%	D	S-
39%	E	S- (raisable to pass on External Exam.)
up to 38%	E	S-- Fail

Work assessed in Year 1 consists of :-

1) A study of a town street - an individual topic towards a group project.
2) Vacation study of a house or other building.
3) A study of an urban area such as a school catchment area.
4) Notes and visual material following experimental work, and reading, on soil analysis.
5) A farm study in which a theme is used to view the whole life of a local farm.
6) Visual material and notes on a natural habitat such as a wood, hedge, pond etc.

Second Year work to be assessed consists of:-

A) A conservational or amenity study.
B) A short essay on some aspect of environmental teaching.
C) A short essay on an environment not previously studied (this could be of another part of the world).
D) Extended essay or "pack" on a parish or similar well defined tract of ground easily reached from College.
E) Material prepared for practical use during a Group Teaching Practice

(Items D and E earn a higher assessment than earlier pieces of work).

Third Year assessed work consists of :-

1) Individual study in depth (earning $\frac{2}{3}$ of Third Year mark).
2) Filmstrip, tape recording or models based on study area in scheme 1.

In arriving at a final mark, weighting is given to later work. In the case of men following a two year course, second year work earns 3/5 of the total. When men take this course to Principal Subject level, the work of their final year earns 2/3 of their final mark. This weighting is designed to give full credit to progress in attitudes and achievements by students as their studies advance, and to place stress on the need to achieve a high measure of integration between the component parts of the two and three year programmes.

External Examination

If no Principal Subject students are presenting themselves in a given year, the External Examiner (in 1971, Mr. G.A.Perry of the Berkshire College of Education's Rural Studies Dept.) sees students on two visits -

1) In December of Year 2 to discuss work schemes and general progress with a cross section of the year group.
2) In June to interview a group of students whose work represents a cross section of the mark scale and the tutorial sets, and others about whom Internal Examiners feel special concern. This concern may be based on the very high or low quality of work presented or because a student may have submitted work placing him on a borderline in the A-E five point scale.

In years in which some students are presenting themselves for examination after three years, the External Examiner visits the College twice, as follows:-

1) In March to interview Third Year students before the end of the Easter Term and before the start of their final Teaching Practice.
2) In June to interview Second Year men on the basis explained above.

Internal Examination.

It is College practice that formal examinations may be set at the discretion of tutors. Marks earned in such examinations would contribute to students' final marks but would only form a small proportion of the total. No question

APPENDIX IV

BEST COPY AVAILABLE

University of Durham

Institute of Education

ENVIRONMENTAL EDUCATION IN SECONDARY SCHOOLS AND COLLEGES OF F.E.

A ONE- DAY CONFERENCE

4th March 1972 10.00 a.m. - 4.30 p.m.

at

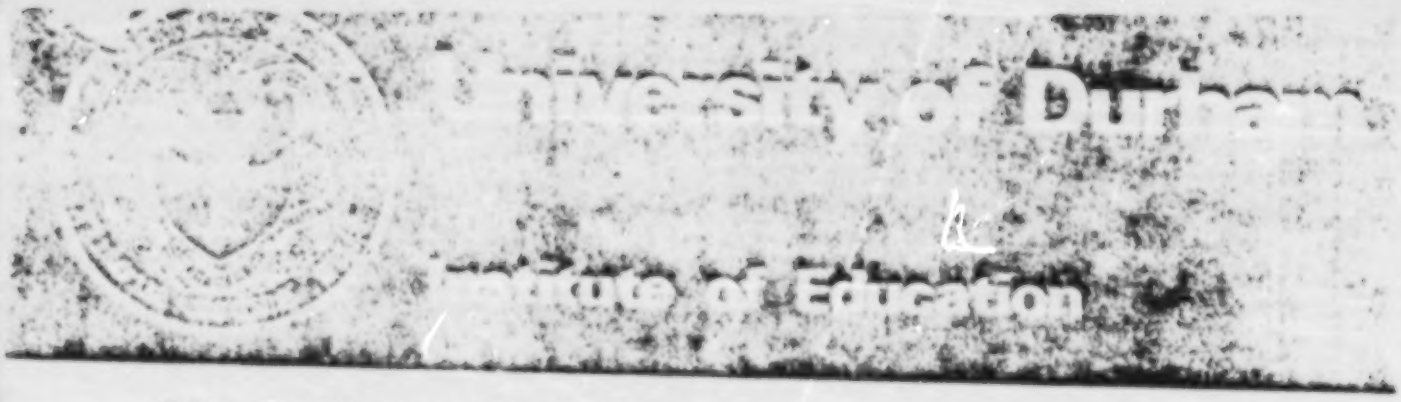
TEESSIDE COLLEGE OF EDUCATION

Newlands Road, Middlesbrough.

PROGRAMME (Provisional)

10.00 a.m.	Coffee in the Senior Common Room
10.20-11.15	Mr.R.W.Colton, Director, Schools Council Project Environment, Newcastle University - "Project Environment". (Chairman: G.D.Walker, Teesside College of Education)
11.20-12.15	Mr.S.McB.Carson, Adviser for Environmental Studies, Hertfordshire L.E.A. - "Environmental Studies - the Educational Background and the 'A' level syllabus". (Chairman : G.D.Walker)
12.30- 1.30	Buffet Lunch in the Senior Common Room
1.35- 2.30	Mr.C.Bell, Head of the Faculty of Environmental Studies, Egglescliffe Comprehensive School - "The Organisation and Pattern of Environmental Education in a Secondary School". (Chairman: M. Bamlett, Teesside College of Education)
2.35-3.30	Dr.P.Evans, Department of Zoology, University of Durham, Durham County Conservation Trust - "The Need for Conservation". (Chairman: M.G.Williams, Teesside College of Education)
3.30- 3.45	Beverages available in the Senior Common Room.
3.45- 4.30	Discussion. Follow-up.
	(Cars may be parked in Newlands and Abingdon Roads, on either side of the College buildings).
Fees:	£1.50 (including 60p for lunch)
Closing date for Application:	Friday, 25 February 1972.

(Numbers at the Conference will be limited to 50)



Colleagues who were at the Universities and Schools in the North of England Conference will remember that many members of the conference were concerned to have information about sixth form curriculum development; and one important development referred to was Project Environment. For this reason it has been decided to hold the following conference:

ENVIRONMENTAL STUDIES IN THE SIXTH FORM

ONE DAY CONFERENCE

7th December 1971. 10.15 a.m. - 3.30 p.m.

GREY COLLEGE, DURHAM

Speakers: R.W.Colton, Director, Schools Council Project Environment.
S.McB.Carson, Adviser for Environmental Studies, Hertfordshire L.E.A. and Chairman of the Hertfordshire Schools Working Party on 'A' level Environmental Studies.
L.O'Donnell, Head of Department of Environmental Science, Pontefract College of Education.
Dr.D.L.J.Robins, the Town and Country Planning Department, Newcastle University.

The purpose of this one-day conference is to make colleagues aware of the need for environmental education at sixth form level and to acquaint them with developments in this area of the curriculum for both 'A' level and non-'A' level studies in the sixth form. Speakers will also deal with the opportunities available in higher education for those with qualifications and interest in this field.

An important objective for the Conference will be to discuss what further action might be taken to advance the development of sixth form environmental studies in the North of England.

In order to facilitate the work of the Conference, papers prepared by speakers will be circulated in advance.

You may like to know that an 'A' level syllabus has now been published:"Environmental Studies - the construction of an 'A' level syllabus". Compiled by S.McB.Carson. Available from the National Foundation for Educational Research, Book Publishing Division, 2 Jennings Buildings, Thames Avenue, Windsor, Berks. SL3 1QS. £1.00.

Cost of morning coffee and lunch : 60p.

Closing date for applications : Friday, 26th November 1971.

THE UNIVERSITY OF HULL
INSTITUTE OF EDUCATION

ENVIRONMENTAL STUDIES

This course of six evening sessions is designed to familiarise teachers with the Environmental Studies approach. Particular attention will be given to the Nuffield Foundation "Resources for Learning" project and the Schools Council Project on Environmental Studies. There will be practical instruction in relevant aspects of geology and prehistory and also assistance in the preparation of teaching aids for fieldwork in urban and rural environments.

The course tutor is Mr. J. F. D. Bridger, Principal Lecturer in Evolution and Pre-History, Kingston Upon Hull College of Education.

Dates Tuesdays, 3rd, 17th, 31st October, 14th, 28th November, 12th December, 1972.

Time 7.00 p.m. to 9.00 p.m.

Place The meetings on 3rd October and 12th December will be held at the Institute of Education, 173 Cottingham Road, Hull. All other meetings will be held at Kingston Upon Hull College of Education, Cottingham Road, Hull.

Fee £1.50p. Teachers may be able to obtain grants from their L.E.A's towards this charge and their travelling expenses.

To: Organiser for In-Service Training,
Institute of Education,
University of Hull,
173 Cottingham Road,
HULL.

ENVIRONMENTAL STUDIES

I wish to attend the course and enclose my fee of £1.50p made payable to the University of Hull.

Name .....

School .....

.....

A.T.O./D.E.S. COURSES

Courses arranged jointly by the Area Training Organisation of the University of Nottingham School of Education and Her Majesty's Inspectorate.

Nottingham 39 - Ecology and Nature Conservation

Commencing Monday, 17th July to Friday, 21st July, 1972, followed by ten meetings on Thursday evening during the Autumn Term at Nottingham College of Education, Clifton.

Course Director: Mr. J.A. Adcock, B.Sc., Nottingham College of Education.

The course is intended for teachers of Biology and Environmental Studies in secondary schools and teachers in primary schools with a particular interest in these subjects.

This course will begin by looking at some habitats available for study within easy reach of urban environment - playing fields, gravel pits, canals and streams, pit tips and local nature trails. Lectures during the Autumn term will look at some recent advances in ecological theory - and the part this might play in the teaching of ecology and conservation in schools.

Duration: (a) Five field days (Monday, 17th July - Friday, 21st July) centred at Nottingham College of Education (approximately 9.30.a.m. - 6.30.p.m. daily).

(b) Ten lectures during the Autumn term. Thursdays at 6.30.p.m.

Cost: Full residence only ... ... £12,40.

There is no tuition fee payable.

Application to attend should be made on the slip below to arrive not later than Friday, 23rd June, 1972.

Telephone enquiries may be to Mrs. A. Eaton, Nottingham 56101 extension 2278.

A.T.O./D.E.S. COURSE NOTTINGHAM 38 - BIOLOGY AND NATURE CONSERVATION

I/We wish to attend the course to be held at Nottingham College of Education, Clifton, From Monday, 17th July to Friday, 21st July inclusive, and the following ten Thursday evening meetings during the Autumn term.

Name(s) _____ School _____
(Block letters please)

_____ Address (In full) _____

_____ _____

School Tel. No.: _____ L.E.A. _____

Cheque/postal order (£12.40 full board per person) enclosed _____
These should be made payable to the University of Nottingham.

To be returned to Mrs. A. Eaton, Secretary for Short Courses, School of Education, University of Nottingham, University Park, Nottingham NG7 2RD to arrive not later than Friday, 23rd June, 1972.

UNIVERSITY OF READING SCHOOL OF EDUCATION

Courses and Conferences

"CONSERVATION AND THE SCHOOL CURRICULUM"

A week end conference for teachers

PALMER BUILDING, THE UNIVERSITY, WHITEKNIGHTS, READING.

Friday and Saturday, 7th and 8th May. 1971.

This conference is intended for teachers of geography, biology, history, the humanities and other disciplines who are concerned to introduce work on conservation to their pupils, particularly at secondary level. It may also be of interest to primary school teachers, youth workers and those concerned with field studies and the conservation movement. The conference is a response to interest aroused by European Conservation Year and will be preparation for continuing this work in the forthcoming World Conservation Year. The programme will include some relevant background material but particularly aims to suggest practical ways of bringing conservation problems into teaching. There will be an exhibition of useful material and handout literature on resources available to teachers locally and nationally. The discussion groups will tackle practical ways of developing specific topics with pupils.

PROGRAMME

Friday 7th May: THE CONSERVATION PROBLEM

Chairman: Professor J. Burnett, Oxford University Department of Agriculture.

4.15 - 4.45	Conference members assemble. Tea available at small charge in University Buttery.	
4.45	Chairman's opening remarks.	
4.50 - 6.00	"The Need for Conservation"	Philip Oswald Deputy-Director Nature Conservancy.
6.00 - 7.00	Topic and speaker to be announced later	
7.00	Buffet Supper	
8.15 - 9.30	"Practical Approaches"	R. D. Jennings. British Trust for Conservation Volunteers

M/70/56

ENVIRONMENTAL STUDIES

Organizer D. W. Warwick, M.A., Lecturer, Further Professional Education, University of Lancaster School of Education.

This course, which has been approved by the D.E.S. for purposes of pooling under Circular 14/70 and Administrative Memorandum 26/70, consists of approximately one hundred contact hours. It is open to teachers in primary and secondary schools, Headmasters, educational administrators and lectures in Colleges of Education. A strong practical element is built into the course, which gives the opportunity of working individually or in groups in four widely contrasting environments. Those attending the course will be asked to develop approaches to environmental studies within their schools during the academic year 1971/72 and hence contribute to 'workshop' sessions that have been planned.

To a large extent the course will develop according to the interests of those attending it, but a general outline follows. Unless otherwise stated each section will commence at 6.30 in the evening of the first day when a full briefing will take place and will terminate on the afternoon of the last one.

1. 1st - 5th September, 1971 - Residence at the University, practical work in Blackburn.

1st September will be spent at the University, and the programme is as follows:

11.15 - 'Environmental Studies in the Primary School'
R. W. Heath, B.Sc., Staff Tutor, University of Newcastle Institute of Education.

12.30 - Lunch

2.15 - 'Environmental Studies in the Secondary School'
W. R. J. Davies, B.A.,B.Sc., Assistant Educational Adviser, Shropshire L.E.A.

3.30 - Tea

4.15 - The Organization of the Course
Organizer and Course Tutors

6.30 - Dinner

8.00 - T. H. Titherington, N.D.D.,A.T.D. (Dept. of Environmental Studies, Chorley College of Education) will brief Course members on the work of the next four days.

2nd - 5th September - Work in Blackburn centred on the Annexe of Chorley under the direction of Mr. Titherington. Evening discussions/lectures/seminars at the University.

2. 7th - 10th January 1972 - at St. Martin's College, Lancaster, under the direction of Mr. I. Wilson, (Department of Education).

3. 7th - 10th April, 1972 - at Poulton-le-Fylde College of Education, Nr. Blackpool, under the direction of G. B. Stead, B.Sc., (Department of Biology). Three main areas will be concentrated on - the beach, the sand dunes, and the salt marsh.

Contd.....

4. 8th - 13th September, 1972 - at Charlotte Mason College of Education, Ambleside, Westmorland, under the direction of P. A. Sauvain, M.A., (Department of Regional Studies).

The concluding part of this section of the course will entail a summary of the work done and a full resumé of the implications for the classroom situation.

Assessment

Some evaluation of the work developed within the different schools will be built into this course and certificates of successful attendance will be issued.

Cost of Course

Full Residence and Tuition = £40

Tuition and Meals only = £30

APPENDIX V

UNIVERSITY OF READING SCHOOL OF EDUCATION

Diploma in Environmental Studies in Education

In October 1972 the School of Education, University of Reading, will be introducing a new one-year, full-time diploma course for experienced teachers. It will replace the existing Diploma in Rural Education and is intended for those concerned to encourage the study of the environment within the curriculum of middle and secondary schools. The situation and facilities of the University make it an exciting base for such a course.

The course will be organised to help those following it to make full use of the educational resources of the environment by providing a working knowledge of a wide range of subjects and an understanding of the interrelationships between them. There will be ample opportunity to use field techniques and to study documents. All the course work will be related to the school situation.

The interpretation given to Environmental Studies will be based on two themes:

(i) energy flow and natural resources;
(ii) interaction of man with the environment.

Part of the course will involve investigation of problems related to these themes. Where suitable the approach will be scientific and quantitative, but the importance of aesthetic considerations and value judgments in decision making will not be neglected. Both urban and rural problems will be selected. Two weeks of field study away from the University will be an integral part of the course. The work will be divided into three sections which will involve lectures, seminars, laboratory practicals, individual and group field investigations or visits as appropriate.

1. Subject-based studies. This component which will permit some degree of choice is designed to increase personal understanding of the environment by means of courses in geography, geology, biology, local history, meteorology and physical science.
2. Problem-based studies. Theoretical and practical examination of selected environmental problems, including consideration of economic and sociological factors, planning and resource management.
3. Professionally-based studies. The role and teaching of Environmental Studies within the curriculum of middle and secondary schools. A critical examination of the variety of methods which may be used.

Further particulars and application forms may be obtained from The Secretary, School of Education, University of Reading, 29 Eastern Avenue, Reading, RG1 5RU. The closing date for applications is 31st March in the year for which application is made.

TD/HC
14/12/71

THE UNIVERSITY OF LIVERPOOL

INSTITUTE OF EDUCATION

Diploma in Environmental Education.

Purpose

This course is open to qualified teachers with at least three years' approved professional experience, and is designed for those who wish to undertake increased responsibility in the field of environmental education, with particular reference to the 'middle years of schooling'. Work will be on an inter-disciplinary basis in a curricular area which is coming to be seen as increasingly relevant, yet has so far been neglected, at this level, in the context of in-service training. The course has a dual purpose, aiming to introduce its members to (or reinforce for them) the structures and concepts of the component disciplines involved in environmental education, and at the same time providing a strong professional bias, both theoretical and practical.

Organisation

Although the diploma is awarded by the University on successful completion of the course, and co-ordination will be the responsibility of the Institute of Education, the course will be conducted by members of staff of Colleges of Education within the Liverpool Area Training Organisation. The full-time element mentioned in the draft regulations will add up to at least ten weeks over the two years of the course. It will be mainly devoted to field work. There will probably be three week-long excursions, held in vacation time. The rest of the field work will be covered at week-ends. Members of the course must therefore expect to give up a certain amount of time at week-ends, and over the stated holiday periods. Lectures and practical sessions will be held on two evenings, Mondays and Thursdays each week during term time. Venues will change according to the college under taking the particular part of the course. As far as possible, however, the timetable will be 'blocked' so that switching from College to college will not be too frequent. All the college venues except one (Edge Hill Ormskirk) are in Liverpool. Details of the examination are shown in the draft regulations.

Programme

The following are the provisional areas of study envisaged in the course.

1) Contrasted case-studies of environments within the region. These will include rural and urban environments, selected to illuminate a wide range of contributions from the environmental sciences (particularly ecology), history and geography. The links between home and environment, social problems, and the contributions of physical education and aesthetic appreciation to environmental study will also be considered.

2) Theories of curriculum development and strategies of innovation in school.

3) Field weeks will be held in environments contrasting with those of Merseyside and South-West Lancashire. Proposed areas for the full-week excursions are the Lune Valley, North-east England, and the Lake District or North Wales. Most of the week-end field work will be concerned with the home area, and for the most part will be integrated with lectures and practical work.

4) The "vocational aspect" will be strongly emphasised, and links with schools and other organisations, particularly with reference to the work initiated by the Liverpool Educational priority area project, will be established.

continued.....

5) Two separate sets of options are proposed:-

a) Methodological options, including the vicarious study, through original source materials, of environments distant both in space and time; and also background options in environmental sciences, including geology. It is hoped that teachers expert in a particular subject area will choose an option less familiar to them.

b) Environmental options will include "Home and Environment". Recreation and Environment"; "Planning and the Environment"; and "The Appreciation of the Environment".

The number of options which can be offered will largely depend on the size of membership of the course.

6) The theme of "conservation" will run like a thread through the course.

7) Considerable attention will be paid to linking the subject matter of the course with its application in the middle school context, including the preparation of a data bank and kits.

Fees

Under the terms of D.E.S. Circular 14/70 and Administrative Memorandum 26/70, the Department no longer 'approved' diplomas offered by universities. If the L.E.A. is satisfied the "the course proprosed is appropriate to the teacher concerned" assistance may be given, and the expenditure 'pooled'.

As this course has been arranged so as to avoid the need for secondment, the expenses involved may be summarised as follows:-

Fees: (£50 for each of two years) £100

Expenses: (estimated) for field excursion accommodation (at present rates) approximately £50 over the course. In addition, the costs of transport and materials will have to be met.

Examination: £5,00; for re-examination £3.00

In general, bills will be sent direct to students, who, at the discretion of the L.E.A. will be able to reclaim fees and expenses from their employing authorities under the arrangements set out in the Memorandum referred to above.

Teachers successfully completing the course are eligible for a salary increment, subject to the approval of the employing authority.

Application

Application for admission to the course should be made as soon as possible to the Secretary, Institute of Education, Abercromby Square, The University, P.O. Box 147, Liverpool.

Regulations for Diploma In Environmental Education

1. Candidates entering on the course of study for the Diploma in Environmental Education shall have satisfactorily completed an approved initial qualification in education and shall have had at least three years approved professional experience.

2. The course of study shall be part-time, extending over two academic years, but shall include short periods of full-time study amounting in total to not less than 5 weeks in each year.

3. The course of study shall include:

   (i) Interdisciplinary studies of sample environments in the Merseyside region and of contrasted environments elsewhere.

   (ii) Recent developments in studies of the environment and of conservation.

   (iii) Theories of curriculum development with special reference to environmental education.

   (iv) Strategies of innovation in school.

   (v) One each of two series of optional courses approved by the Board of Management.

4. Each Candidate shall be required to complete a dissertation not exceeding 10,000 words in length, on an approved topic related to environmental education.

5. The Deiploma shall be awarded to candidates who have:

   (i) attended regularly and made satisfactory progress in the prescribed course and practical work.

   (ii) satisfied the Examiners in the following:-

      (a) a written examination on the subjects of the course.

      (b) their dissertation.

6. An oral examination may be required.

7. A mark of distinction may be awarded to a candidate of exceptional merit.

8. A candidate who fails to satisfy the examiners in 5 (ii) (a) or (b) above shall be required to offer himself for re-examination in the section or sections in which he has failed.

9. A candidate shall normally be allowed <u>one</u> opportunity for re-examination, taken within one year of the completion of the course.

10. The fee for the examination shall be £5.00: for re-examination £3.00.

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